



# RIT 101

# RIT Scale 101

Unique Features of the RIT Scales

Calibration of Items

Scoring

Interpretation of RIT Scores



# Unique Features of the RIT Scales

- Equal interval
- Cross graded
- Change over time
- Stability over time
- Allow the development of item banks
- Allow tests specific to student needs
- Allow tests with particular psychometric properties



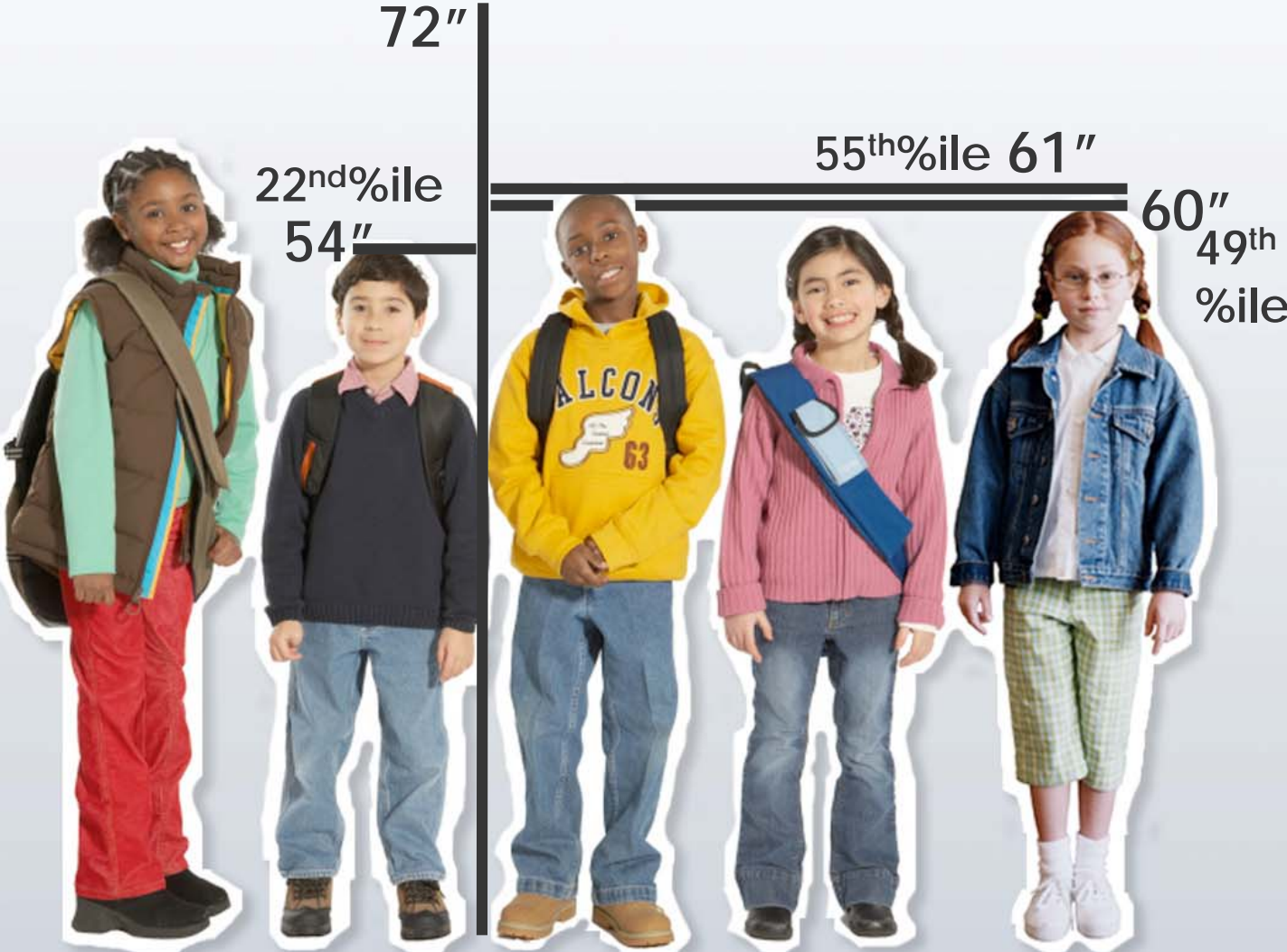
# Equal Interval Scales

72"



0"

# Equal Interval Scales



# Equal Interval Scales

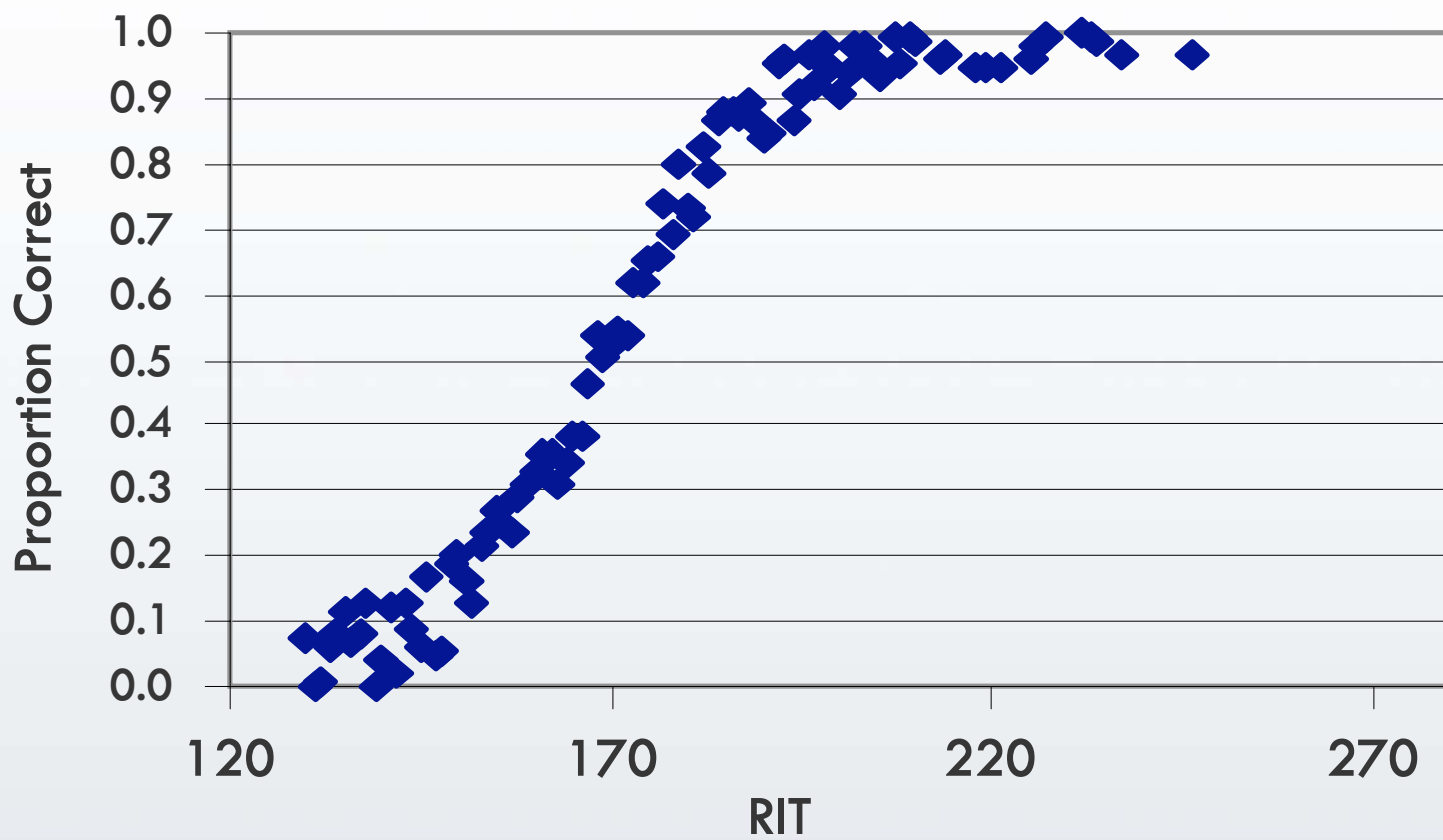


# Calibration of Items

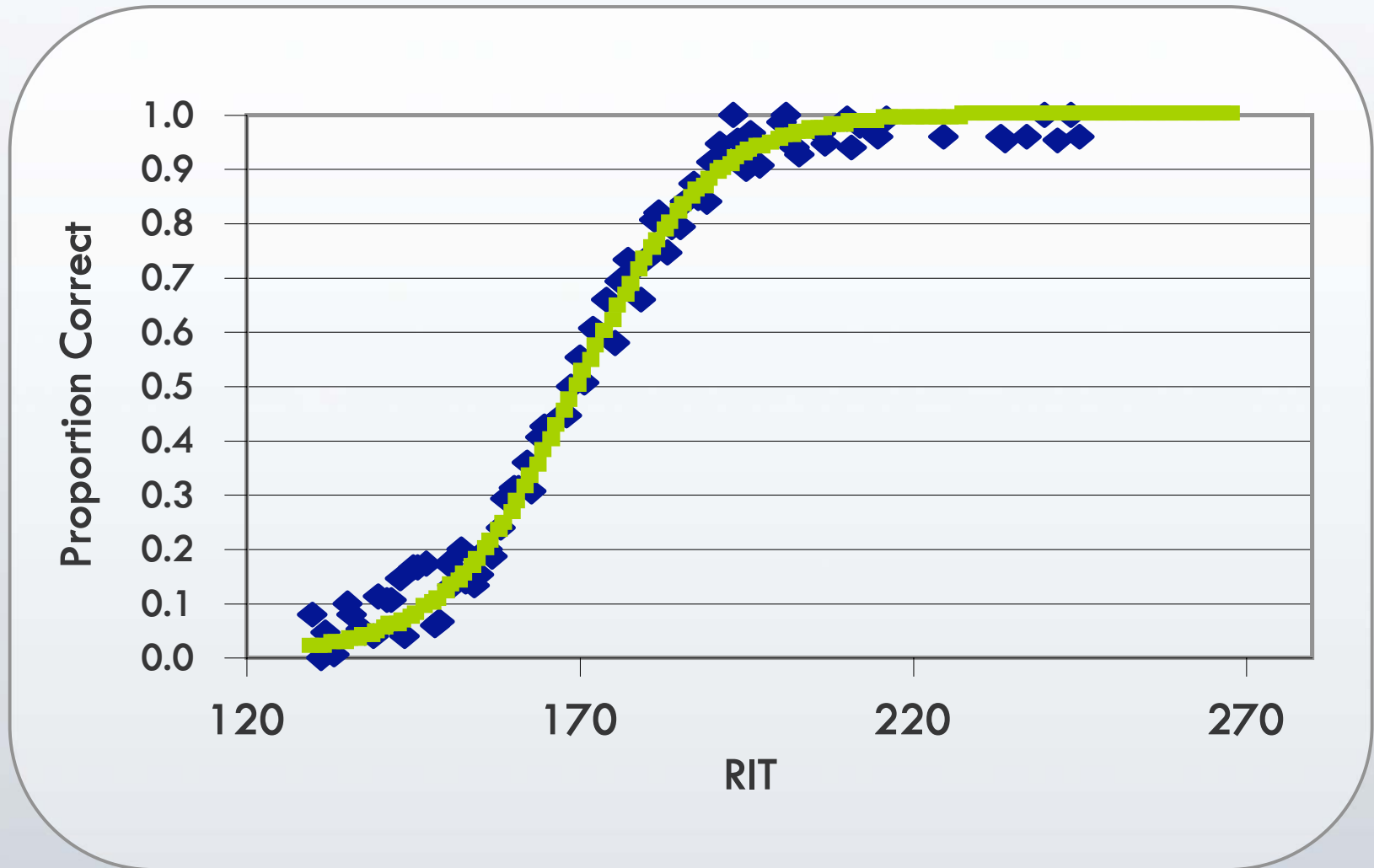
- History of RIT scales
- Adding questions
- Rasch Model – Item Response Theory
- Field testing (fixed-parameter calibration process)



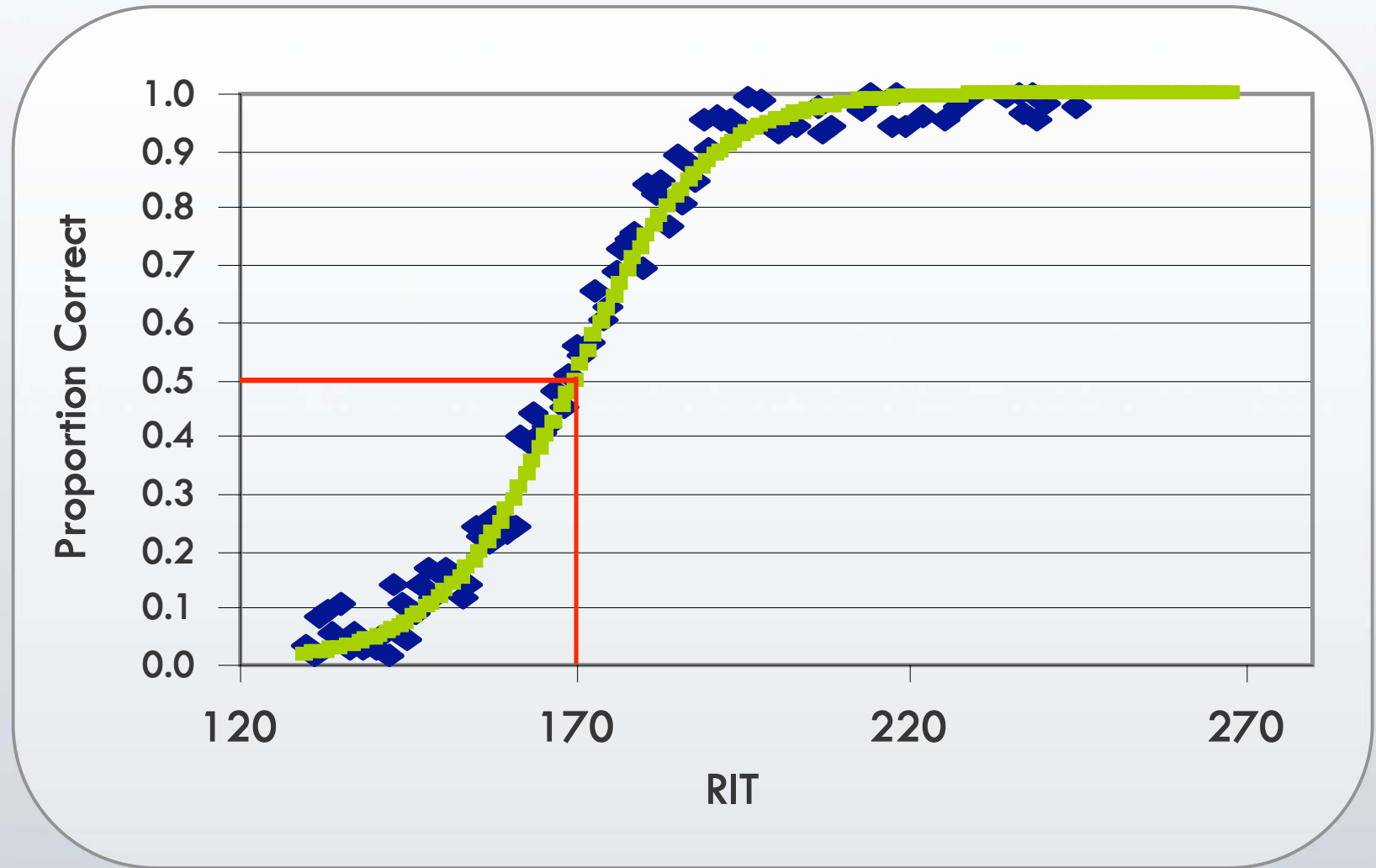
5 + 5 = ?



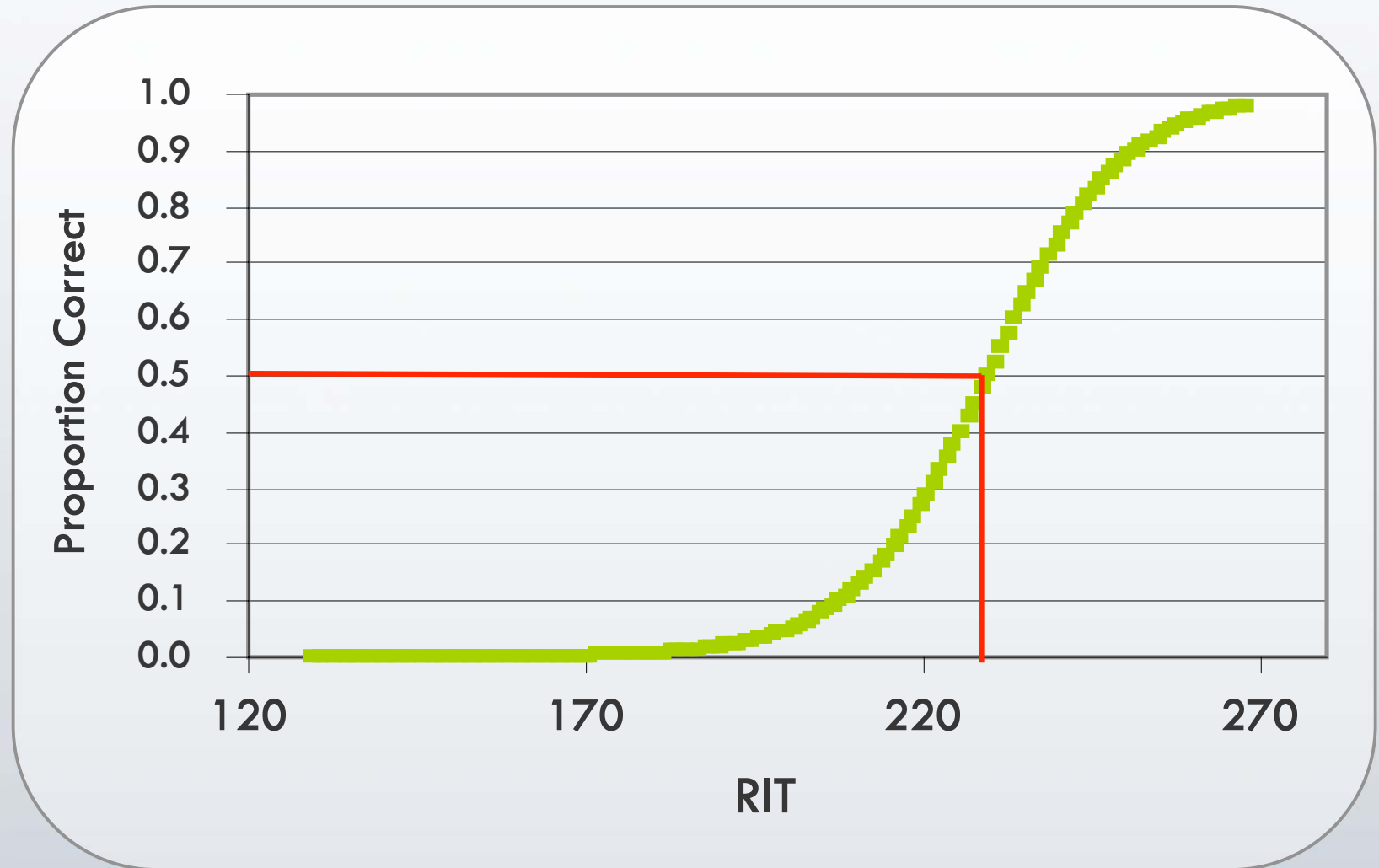
# 5+5=? – Curve fit



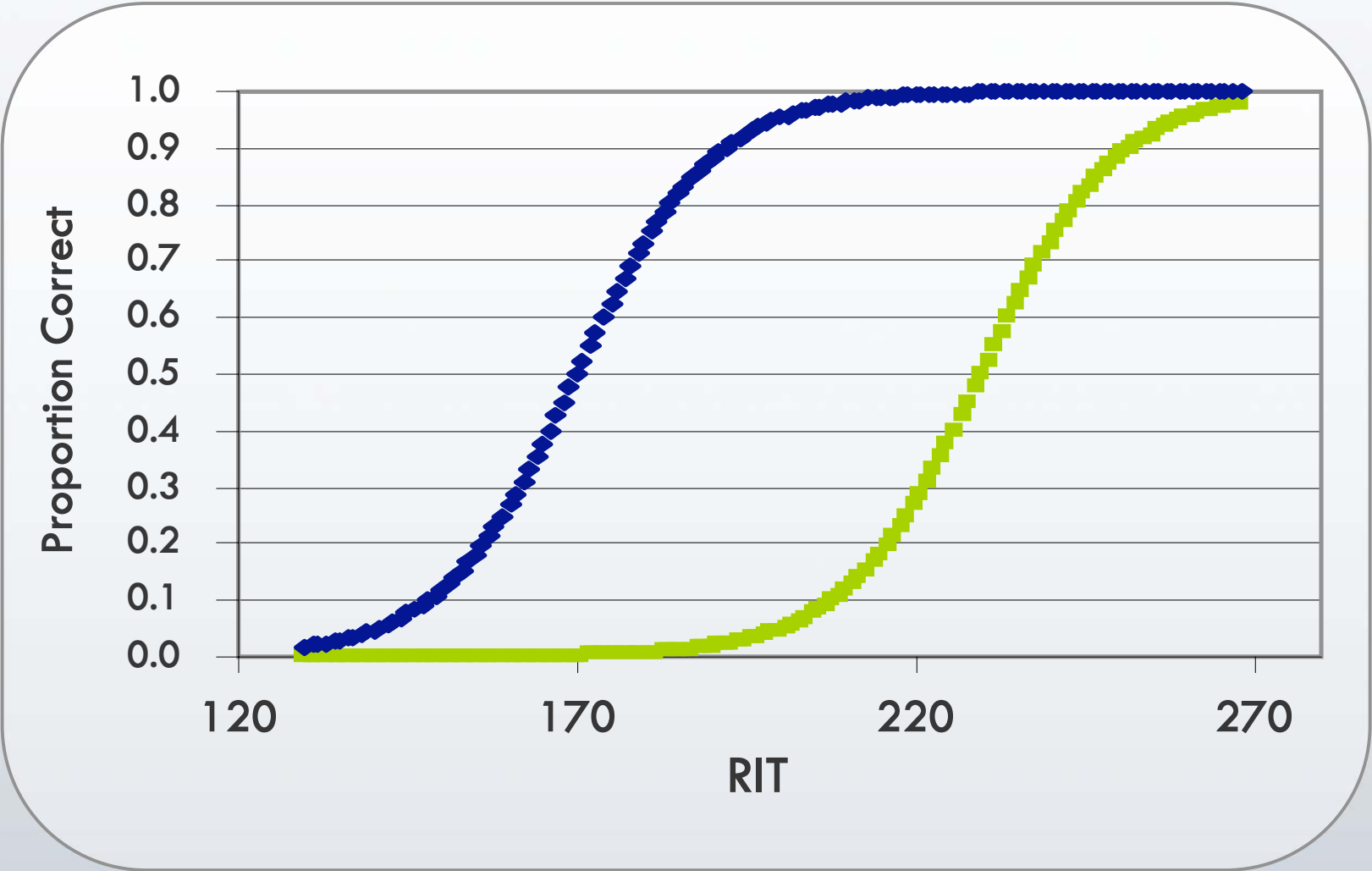
# 5+5=? - Calibration



# The square root of 497=?



# Both items

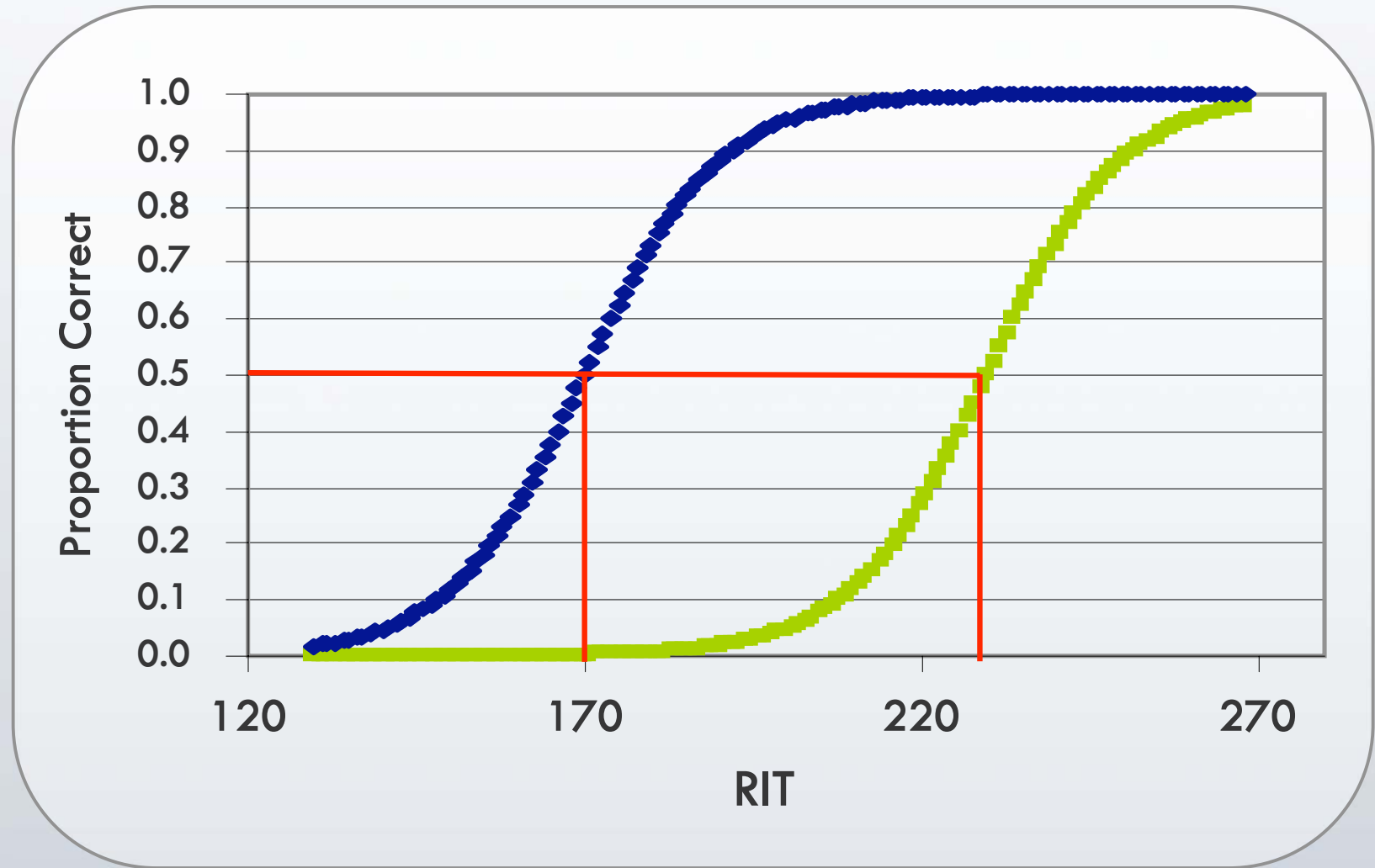


# Scoring

- Traditional ideas of test scores
- Test questions differ in their difficulty
- Magic scoring (maximum likelihood)
- Item difficulty and student scores are on the same scale



Consider scoring with first item correct and second item incorrect



# Interpretation of RIT Scores

- Normative comparisons
- Standards-based comparisons
- Content comparisons
- Growth comparisons



# Meet Shauna

221

A spring 5<sup>th</sup> grader who scored 221 in mathematics this spring



# Interpreting Shauna's RIT Normative

221

62<sup>nd</sup> percentile  
relative to other  
spring 5<sup>th</sup> grade  
students



# Interpreting Shauna's RIT Standards

221 Shauna's score  
220 Arizona proficiency standard



# Interpreting Shauna's RIT Standards

227 South Carolina  
proficiency standard

221 Shauna's score

220 Arizona proficiency  
standard

210 Illinois proficiency standard



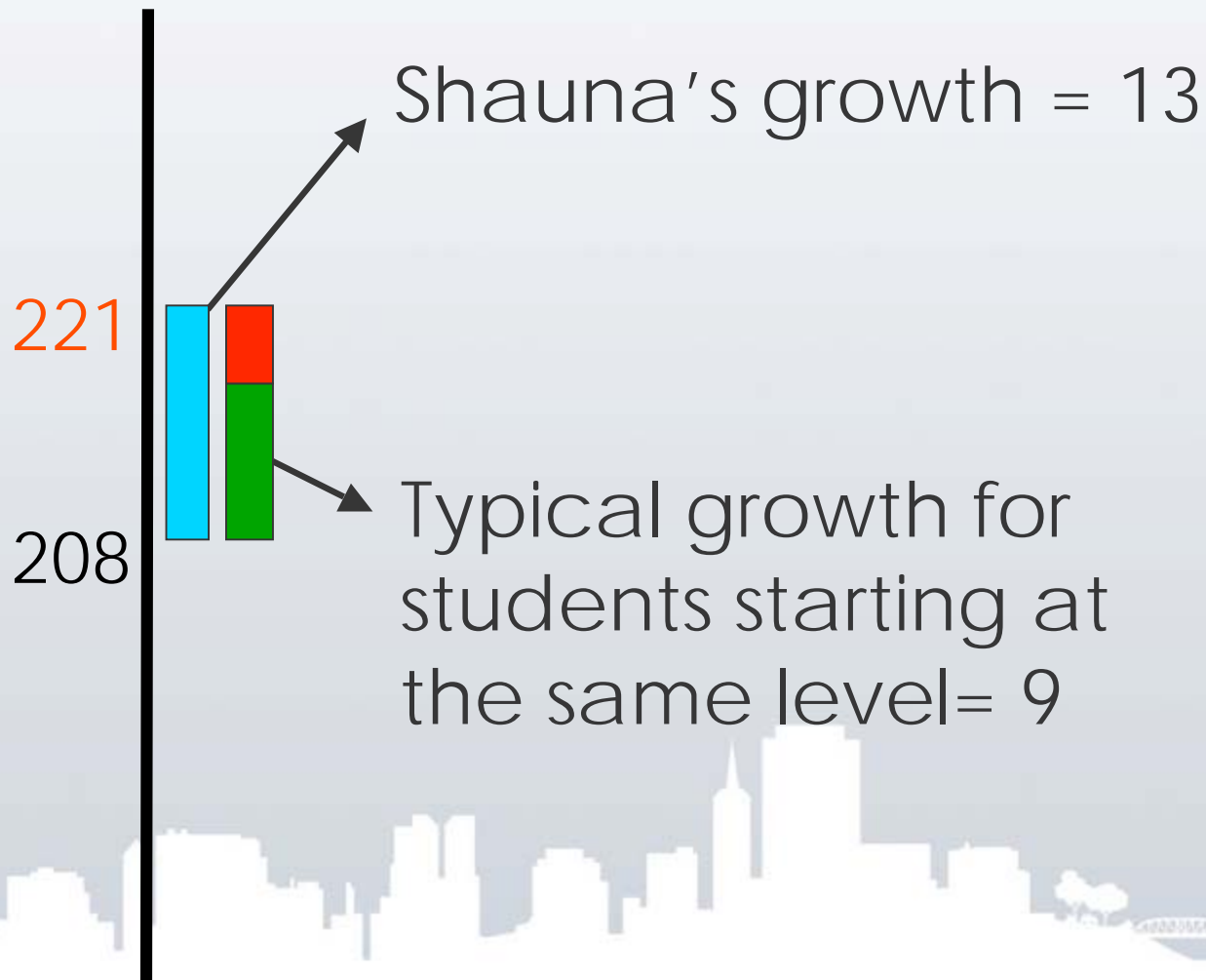
# Interpreting Shauna's RIT Content

**Subject: Mathematics**  
**Goal Strand: Measurement**  
**RIT Score Range: 221-230**

221

Secured Skills RIT Range: 211-220	Emerging Skills RIT Range: 221-230	Future Skills RIT Range: 231-240
<b>Length, Weight, Volume</b> <ul style="list-style-type: none"> <li>Measure length to the nearest millimeter, centimeter, meter, and kilometer</li> </ul>	<b>Length, Weight, Volume</b> <ul style="list-style-type: none"> <li>Measure length with metric measures (centimeter)</li> <li>Measure length with customary measures (inch)</li> <li>Select the appropriate unit of measure for length, area, and volume</li> </ul>	<b>Length, Weight, Volume</b> <ul style="list-style-type: none"> <li>Find the volume of a pyramid</li> </ul>
<b>Area, Perimeter, Circumference</b> <ul style="list-style-type: none"> <li>Calculate the area of irregular shapes</li> <li>Understand the effects of changing dimensions on perimeter and area</li> </ul>	<b>Area, Perimeter, Circumference</b> <ul style="list-style-type: none"> <li>Analyze circles: center, chord, diameter, radius, arc, semicircle, and circumference</li> <li>Find the missing angle measurement in a triangle when two angles are known</li> </ul>	<b>Area, Perimeter, Circumference</b> <ul style="list-style-type: none"> <li>Find the perimeter of a square or rectangle using the formula</li> <li>Find the perimeter of polygons</li> <li>Calculate the area of a parallelogram and rectangle</li> <li>Calculate the area of a triangle</li> <li>Calculate the circumference of a circle using the formula</li> </ul>
<b>Time, Temperature</b>	<b>Time, Temperature</b>	<b>Time, Temperature</b> <ul style="list-style-type: none"> <li>Convert from Celsius to Fahrenheit</li> <li>Subtract Fahrenheit temperatures</li> </ul>
<b>Angle Identification and Measure</b> <ul style="list-style-type: none"> <li>Measure angles using a protractor</li> </ul>	<b>Angle Identification and Measure</b>	<b>Angle Identification and Measure</b>
<b>Money</b> <ul style="list-style-type: none"> <li>Compute basic operations with monetary amounts up to and including \$20.00</li> </ul>	<b>Money</b>	<b>Money</b> <ul style="list-style-type: none"> <li>Find commission and total pay</li> <li>Compute and count change greater than \$20.00</li> </ul>
<i>New Vocabulary in this Range:</i> yards, measure of angle, degrees, protractor, centuries, below zero, Celsius, rectangular solid, rectangular prism, decades, ounces	<i>New Vocabulary in this Range:</i> reasonable, formula, segment BC, pi, radius squared, diameter, metric units, quarts, gallons, rectangular box, base, rate	<i>New Vocabulary in this Range:</i> rectangular house, height and base, algebraic expression, rows and columns, checking account, car purchase, commission, simple interest
<i>New Signs and Symbols:</i> " = inches, yd = yards, b = base, h = height, r = radius, s = side, angle symbol, - for negative, + for positive, d = distance, tsp = teaspoon, pt = pint, gal = gallon, qt = quart, c = cup	<i>New Signs and Symbols:</i> oz = ounces, C = circumference	<i>New Signs and Symbols:</i> $F = 9/5 C + 32$ , formula for finding volume of a pyramid

# Interpreting Shauna's RIT Growth





Northwest Evaluation Association

*Partnering to help all kids learn*

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